

Mila

27 July 01 30 Nov 99

12/03/2003 00:41 FAX 202 756 8087

McDermott Will Emery

004/013

09/890,095

AMENDMENT TO THE CLAIMS

1. (Currently amended) A semiconductor laser device comprising:

a resonant cavity disposed between a n-type compound semiconductor layer and a p-type compound semiconductor layer at the main surface and the opposite surface, a light having a wavelength of 0.4  $\mu$ m or less is emitted along the interfaces of the n-type compound semiconductor layer and the p-type compound semiconductor layer by applying a voltage to each compound semiconductor layer; and

a reflective film adhered to an end facet of the resonant cavity,  
wherein the reflective film is composed of a first dielectric layer and a second dielectric layer, the second dielectric layer is made of containing niobium oxide.

2. (Cancelled)

3. (Previously presented) The semiconductor laser device of Claim 1, wherein the n-type compound semiconductor layer and the p-type semiconductor layer are made of Group III - V nitride semiconductors.

4. (Previously presented) The semiconductor laser device of Claim 1, wherein a refractive index of the second dielectric layer is greater than a refractive index of the first dielectric layer.

5. (Previously presented) The semiconductor laser device of Claim 1, wherein the first dielectric layer is made of silicon dioxide or aluminum oxide.

09/890,095

## 6. (Cancelled)

7. (Previously presented) The semiconductor laser device of Claim 4, wherein the n-type compound semiconductor layer and the p-type semiconductor layer are made of Group III - V nitride semiconductors.

8. (Previously presented) The semiconductor laser device of Claim 1, wherein the reflective film is formed by alternately laminating a plurality of first dielectric layers and a plurality of second dielectric layers containing niobium oxide.

9. (Currently amended) The semiconductor laser device of Claim 8, characterized in that wherein the first dielectric layers are made of silicon dioxide or aluminum oxide.

## 10. (Cancelled)

11. (Currently amended) The semiconductor laser device of Claim 8, characterized in that wherein the semiconductor layers are made of Group III-V nitride semiconductors.

12. (Currently amended) A method for fabricating a semiconductor laser device, said method comprising the steps of:

sequentially depositing a n-type compound semiconductor layer, a resonant cavity emitting a light having a wavelength of 0.4  $\mu$ m or less, and a p-type compound semiconductor layer on a substrate;

**09/890,095**

exposing an end facet of a resonant cavity in an emitting direction by cleaving or etching  
the; and  
forming a reflective film composed of a first dielectric layer and a second dielectric layer  
containing niobium oxide on the exposed end facet of the resonant cavity, the second dielectric  
layer is made of niobium oxide.

13. (Previously presented) The method of Claim 12, wherein the step of forming the reflective film includes the step of alternately depositing a plurality of first dielectric layers and a plurality of second dielectric layers containing niobium oxide.

14. (Currently amended) The method of Claim 12, characterized in that wherein the reflective film is formed by a sputtering process or a reactive sputtering process.

15. (Currently amended) The method for of Claim 12, wherein the n-type compound semiconductor layer and the p-type semiconductor layer are made of Group III-V nitride semiconductors.

16. (Previously presented) An optical disk apparatus comprising:

a light-emitter including the semiconductor laser device of claim 1;  
a condensing optical system that condenses laser light emitted from the light-emitter on a storage medium on which data has been recorded; and  
a photodetector that detects part of the laser light that has been reflected from the storage medium.

**09/890,095**

17. (New) The semiconductor laser device of Claim 1, further comprising a quantum well active layer sandwiched between the n-type compound semiconductor layer and the p-type compound semiconductor layer.

18. (New) The semiconductor laser device of Claim 17, wherein said quantum well active layer comprises a barrier layer and a well layer.

19. (New) The semiconductor laser device of Claim 17, wherein said reflective film is formed so as to be in direct contact with said quantum well active layer.

20. (New) The method of Claim 12, further comprising the step of depositing a quantum well active layer between the n-type compound semiconductor layer and the p-type compound semiconductor layer.

21. (New) The method of Claim 20, wherein said quantum well active layer comprises a barrier layer and a well layer.

22. (New) The method of Claim 20, wherein said reflective film is formed so as to be in direct contact with said quantum well active layer.